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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/457,434	12/07/1999	EDWARD S. ELLIS	HEN-9910	7681

27810 7590 06/03/2003

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EXAMINER
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JOHNSON, JERRY D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 06/03/2003

21

Please find below and/or attached an Office communication concerning this application or proceeding.

AS21

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/457,434	ELLIS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jerry D. Johnson	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 1764

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on March 12, 2003 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haun et al.

Haun et al, U.S. Patent 5,114,562, teach a mineral oil conversion process which includes hydrodesulfurization and hydrogenation steps performed in separate reaction zones. The subject invention specifically relates to the hydrogenation of distillate petroleum fractions to produce low sulfur content products including diesel fuel and jet fuel (column 1, lines 7-13). The feedstock could include virtually any middle distillate (column 4, lines 5-6). Desulfurization conditions employed are those customarily employed in the art for desulfurization of equivalent feedstocks (column 4, lines 29-31). The effluent stream of the desulfurization zone is stripped with a stream of hydrogen-rich gas prior to being fed to the hydrogenation zone (column 6, lines 36-47). The vapor phase portion of the reaction zone effluent stream is partial condensed and the hydrocarbon fraction is preferably passed into the hydrodesulfurization zone to ensure its complete desulfurization (column 6, line 60 to column 7, line 16). The vapor phase stream from the hydrogenation step is highly rich in hydrogen and relatively low in hydrogen sulfide and is "cascaded" to the hydrodesulfurization zone (column 8, lines 3-15). While Haun et al. differ

Art Unit: 1764

from the instant claims in showing cocurrent flow of hydrogen and hydrocarbons through the reaction zones and a process wherein the stripping gas is the vapor phase product from the second reaction stage, the process of Haun et al is not limited to this manner of operation and hydrogen-rich gas may flow countercurrent to the liquid-phase hydrocarbons through one or more reaction zones (column 8, lines 26-33). Additionally, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use at least some of the vapor phase product from the second reaction stage as a stripping gas because Haun et al. teach that the stripping gas and vapor phase product are both "hydrogen rich" gases. Further, while Haun et al. teach a process wherein hydrogen treat gas is cleaned to remove hydrogen sulfide and recycled, it would have been obvious to omit steps of cleaning and recycling hydrogen treat gas if one did not want to receive the benefit of said steps.

Applicant's arguments filed March 12, 2003 have been fully considered but they are not persuasive.

Applicants argue

[a]s amended, the instant invention requires that the hydrogen-containing treat gas cascaded from the second reaction zone comprise the entire vapor product from the second reaction zone.

Haun does not teach this process configuration. Haun teaches that "A first portion of the hydrogen recovered from the second zone is recycled to the second zone", and "a second portion is passed to the first (desulfurization) zone." (Remarks, page 7).

Applicants' argument lacks merit.

Applicants' claims do not exclude a recycle stream as taught by Haun et al., i.e., a recycle stream is not a product stream. Accordingly, applicants' claims are not patentable distinguished from the process of Haun et al.

Art Unit: 1764

Applicants argue

[t]he instant invention does not add fresh hydrogen into a stripping zone nor use the vapor exiting a stripping zone anywhere within the reaction zones of the instantly claimed process flow scheme. (Remarks, page 8).

Applicants' argument lacks merit.

Applicants' "comprising" claims do not exclude the above recited steps..

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

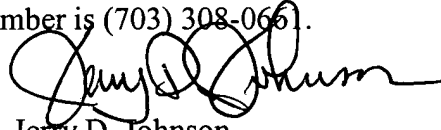
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry D. Johnson whose telephone number is (703) 308-2515. The examiner can normally be reached on 6:00-3:30, M-F, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Caldarola can be reached on (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-5408 for regular communications and (703) 305-3599 for After Final communications.

Art Unit: 1764

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to read "Jerry D. Johnson", written over the printed name.

Jerry D. Johnson  
Primary Examiner  
Art Unit 1764

JDJ

June 2, 2003